



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/657,285	09/08/2003	Stanford R. Ovshinsky	OCC-6	1384
24963	7590	08/01/2005	EXAMINER	
ENERGY CONVERSION DEVICES, INC. 2956 WATERVIEW DRIVE ROCHESTER HILLS, MI 48309			HU, SHOUXIANG	
			ART UNIT	PAPER NUMBER
			2811	

DATE MAILED: 08/01/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PA

Office Action Summary	Application No. 10/657,285	Applicant(s) OVSHINSKY, STANFORD R.	
	Examiner Shouxiang Hu	Art Unit 2811	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 June 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 is/are pending in the application.
- 4a) Of the above claim(s) 4-7 and 12-27 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 8-11 and 28 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 08 September 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

In view of the previous office actions, claims 1-28 are pending in this application; claims 4-7 and 12-27 are withdrawn from consideration; and claims 1-3, 8-11 and 28 remain active in this office action.

Applicant's arguments filed on June 10, 2005 regarding the election requirements have been fully considered but they are not persuasive for the reasons already provided in the previous office action. Nevertheless, it is noted that, upon the allowance of any independent claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of the allowed independent claim.

Drawings

Figures 1 and 2 are objected to as they appear to belong to prior art according to the specification and thus should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g).

Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective

action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-3, 8-11 and 28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Lowrey (US 2002/0036931).

First, it is noted that the instant application claims priority (as CIP) of two previous application of SN 10/384,994 and SN 10/426,321. However, none of these two previous applications discloses the subject matters as claimed in the instant invention of a memory device that utilizes two separately programmable regions of the memory layer. Accordingly, the instant application does not enjoy the priority dates of the two previous applications on the above claimed subject matters. It then makes Lowrey a valid 102(b)-type prior art reference with respect to the claimed subject matter in the instant invention.

Lowrey discloses a chalcogenide programmable memory device (Figs. 1A &B, and 2J"; also see Paragraphs 0004, 0100 and 0101), comprising: a chalcogenide material (290; comprising Te, Se and Ge; and naturally having a plurality of structural states, including accumulation states and greyscale states); a first terminal (130a); a

second terminal (one of 130b and 300) and a third terminal (the other one of 130b and 300), wherein the chalcogenide material includes a first portion (between the first and third terminals) in a first structural state and a second portion (between the second and third terminals) in a second structural state; and the first and second structural states can be naturally selected from among the accumulation states and/or the greyscale states since both of the first and second portions are formed of a programmable-memory-type chalcogenide material, which each can be naturally in any of the states.

Although Lowrey does not expressly disclose that the second terminal can be annular shaped, one of ordinary skill in the art would readily recognize that an electrode with any shape, including annular one, can still function as an electrode, provided it can still build electrical field or current at the intended position, as readily evidenced in the prior art such as: GB 2296820 A (see the electrode 60 in the cover page figure), US 6,774,387 (see electrode 136 in Fig. 7), or US 6,895,148 (see electrode 210 and 315 in Figs. 4-7).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the device with the second electrode being annular-shaped, so that a memory device with desirable electrode shape and/or the desired resulting device layout and/or performance would be obtained.

Regarding claim 8, each of the two portions in Lowrey can be separately programmed into any of the different states. And, different states of the memory material naturally result in different resistances.

Regarding claim 11, it is noted that a programmable memory chalcogenide material can be naturally programmed as non-binary bits since it naturally has more-than-two multiple stable resistance states, and each of these states can be regarded as a memory state.

Response to Arguments

Applicant's arguments filed on June 10, 2005 have been fully considered but they are not persuasive.

Applicant's main arguments include: None of the terminals of device of Lowrey surrounds the chalcogenide material. In response, it In response to applicant's argument that the references fail to show certain features of applicant's invention, it is noted that such features upon which applicant relies are not fully recited in the rejected claim(s). Although the claims are interpreted in light of the specification, limitations from the specification are not read into the claims. See *In re Van Geuns*, 988 F.2d 1181, 26 USPQ2d 1057 (Fed. Cir. 1993).

Applicant's other arguments with respect to above rejected claims have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References A , B and N are cited as being related to an annular-shaped electrode structure.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shouxiang Hu whose telephone number is 571-272-1654. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

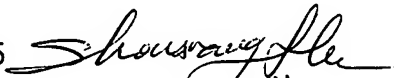
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2811

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SH

July 28, 2005


SHOUXIANG HU
PRIMARY EXAMINER